UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 7
11201 Renner Boulevard
Lenexa, Kansas 66219

MEMORANDUM

SUBJECT: Vapor Intrusion Sampling Results at Former Independent Petroleum Company Site, St. Louis, MO

FROM: Greg McCabe
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TO: Mike B. Davis
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SUPR/ERSB

We have completed our review of the results of the November 11, 2014, vapor intrusion sampling effort at the former Independent Petroleum Company site located in St. Louis, MO. Subslab and indoor air samples were taken from one location in both the current bar (location #4) and warehouse (location #5). An ambient air sample was also collected. Because both of these locations are commercial/industrial properties, we compared the sample results with EPA's Regional Screening Levels for industrial air. These health-based screening levels can be found at: http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/docs/master_sl_table_run_NOV2014.pdf. Sample results were also evaluated using the U.S. Environmental Protection Agency Region 7 Vapor Intrusion Decision Matrix.

The EPA Region 7 Vapor Intrusion Decision Matrix generally recommends that action be considered when indoor air risks exceed 1E-05 for carcinogenic health effects, and/or a Hazard Index equal to 1 for non-carcinogenic health effects. Based on our evaluation of the recent indoor air data, neither a potential excess cancer risk of 1E-05, nor a Hazard Index of 1, was exceeded, either by individual compounds or the cumulative risks from multiple compounds. Therefore, no immediate action is recommended. However, it does appear that the vapor intrusion pathway may be complete. This is evidenced by the presence of high concentrations of PCE and TCE in subslab samples, and lower concentrations of those same contaminants in the co-located indoor air samples, especially at location 4. The information that we were provided made no mention of the completion of a building survey to identify potential indoor air sources of contaminants prior to sampling. Our review assumes that such a survey was completed, and no potential indoor air sources of contamination were identified. We would also note here that a low concentration of PCE was detected in the ambient air sample, which could potentially have contributed to the indoor air concentrations of PCE.

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The data also shows that the subslab concentrations of contaminants in this latest round of sampling are much lower than the subslab concentrations reported during the August, 2014 sampling event. This is an indication of the spatial and temporal variability commonly found in soil gas samples. Because of this variability, and because it appears that there may be a complete vapor intrusion pathway at the site, we are recommending that the Superfund program consider undertaking additional subslab and indoor air sampling at the site once each quarter for the next three quarters. This would allow us to determine if, in fact, the vapor intrusion pathway is complete, and whether health-based screening levels might be exceeded under different weather conditions throughout the year.

Please contact Greg at x7709, or Dan at x7230, if you have any questions regarding our review.